What is claimed is:

1. A method for assembling components, the method comprising the steps of:

forming an outer component having an inner surface, the component formed with a groove for holding a seal, the groove having an opening at the inner surface;

fabricating a seal in the form of a substantially circular ring having a width, a thickness, a scarf cut extending through the width and the thickness, and a second inner surface having an inside diameter;

placing the second inner surface over the outer surface of a cylindrical mandrel having a diameter that is larger than the inside diameter;

expanding the seal on the mandrel such that a gap is formed at the scarf cut; and

inserting the seal in the groove while the seal is expanded.

2. The method of claim 1, wherein the step of expanding the seal further comprising the step of:

circumferentially expanding the seal over the mandrel such that the seal is plastically deformed.

3. The method of claim 1, wherein the step of expanding the seal further comprises the step of:

circumferentially expanding the seal over the mandrel such that the seal is plastically deformed in a region of the seal diametrically opposite the location of the scarf cut.

4. The method of claim 1, wherein the step of expanding the seal on the mandrel further comprises the step of:

forming a gap at the scarf cut, the gap having a length in a free condition that is equal to or greater than the length determined from the equation $Y = -0.4625X^2 +$

2.047X - 2.21, where Y is the length of the gap, X is the diameter of the mandrel, and all dimensions are in inches.

5. The method of claim 1, further comprising the steps of:

inserting a shaft having an outer surface into the outer component adjacent the inner surface; and

pressurizing the groove to force the seal radially toward the shaft such that the second inner surface contacts the outer surface of the shaft.

6. The method of claim 1, further comprising the steps of:

inserting a shaft having an outer surface into the outer component adjacent the inner surface; and

pressurizing the groove to force the seal axially toward a lateral surface of the groove such that a lateral face of the seal contacts the lateral surface of the groove.

7. The method of claim 1, further comprising the steps of:

inserting a shaft having an outer surface into the outer component adjacent the inner surface; and

pressurizing the groove to force the seal radially toward the shaft such that the second inner surface contacts the outer surface of the shaft; and

pressurizing the groove to force the seal axially toward a lateral surface of the groove such that a lateral face of the seal contacts the lateral surface of the groove.

8. The method of claim 1, wherein the step of fabricating a seal in the form of a substantially circular ring further includes the step of molding the seal of PTFE compound reinforced with glass fiber, whose weight is in the range of 15-30 percent of the weight of the PTFE compound.

9. The method of claim 1, further comprising the step of:

recovering the free state condition of the seal by operating the seal under pressure at an elevated temperature of about 300° F.

10. A method for fabricating a split scarf seal, the method comprising the steps of:

fabricating a seal in the form of a substantially circular ring having a width, a thickness, a scarf cut extending through the width and the thickness, and a second inner surface having an inside diameter;

placing the second inner surface over the outer surface of a cylindrical mandrel having a diameter that is larger than the inside diameter; and

expanding the seal on the mandrel such that a gap is formed at the scarf cut.

11. The method of claim 10, wherein the step of fabricating a seal in the form of a substantially circular ring further includes the step of molding the seal of PTFE compound reinforced with glass fiber, whose weight is in the range of 15-30 percent of the weight of the PTFE compound.

12. The method of claim 10, wherein the step of expanding the seal further comprising the steps of:

circumferentially expanding the seal over the mandrel such that the seal is plastically deformed.

13. The method of claim 10, wherein the step of expanding the seal further comprising the steps of:

circumferentially expanding the seal over the mandrel such that the seal is plastically deformed in a region of the seal diametrically opposite the location of the scarf cut.

14. The method of claim 10, wherein the step of expanding the seal on the mandrel further comprises:

forming a gap at the scarf cut, the gap having a length in a free condition that is equal to or greater than the length determined from the equation $Y = -0.4625X^2 + 2.047X - 2.21$, where Y is the length of the gap, X is the diameter of the mandrel, and all dimensions are in inches.